

Notes on Australian Stratiomyiidae.

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The Australian Stratiomyiidae fall into five clearly definable subfamilies which may be readily distinguished by the characters in the key given below. Certain genera have been misallied in the past, and three are still somewhat ambiguous. Two of these, *Syndipnomyia* Kertész, and *Ophiodesma* White, would be best allied with the subfamily Clitellarinae, whilst *Geranopus* White, may be placed with the Sarginae. The genera *Negritomyia* Bigot, *Elissoma* White, and *Peratomastix* Enderlein, join *Lagenosoma*, in the Hermetiinae, as these all form a homogeneous group. The genus *Hermetia* is represented by the introduced *H. illucens* Latrielle, and it is somewhat doubtful whether *H. pallidipes* Hill, is congeneric, but it belongs to the same subfamily, whilst *Pycnothorax* Kertész, described with incomplete antennae, may come in here too.

Key to the subfamilies of the Stratiomyiidae.

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|---|-------------------------|
| 1. Antennae with an extremely long apical segment.
Abdomen with five to seven normal segments, but
when the sixth and seventh are normal, they are
usually capable of being telescoped within the
fifth | <i>Hermetiinae</i> |
| Antennae with the apical segment otherwise formed .. | 2 |
| 2. Abdomen with seven clearly defined segments, none of
which are retracted | <i>Beridinae</i> |
| Abdomen with not more than five clearly defined seg-
ments, the others being modified to form part of
the tubular ovipositor which is retracted, and
similarly reduced on the male | 3 |
| 3. Antennae normal, at most terminating in a thickened
style, never with an arista | 4 |
| Antennae with a hair-like arista | 5 |
| 4. Fourth median vein branching from the baso-median
cell | <i>Stratiomyiinae</i> |
| Fourth median vein branching from the median cell .. | <i>Clitellarinae</i> |
| 5. Median vein three branched | <i>Sarginae</i> |
| Median vein two branched | <i>Paschygasterinae</i> |

SUBFAMILY BERIDINAE.

Genus *Actina* Meigen.

I recently gave a survey of the species of this genus and drew attention to the existence of an intermediate form. I have now added to my collection another species of this intermediate type; the pubescence on the eyes of the male being short and scattered. The metatarsus of the posterior leg of the male of this form is slightly swollen, and this character will distinguish it from that previously referred to. There is no difficulty in isolating the males of the species, but in the new one here described, some difficulty may be experienced in separating it from the female of *A. incisuralis* Macq. I still have some males before me that may belong to other species not yet diagnosed, but all the females known to me may be separated by the following key:—

Key to the females of species of *Actina*.

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|--|------------------------------|
| 1. Wings marked with brown along part of the anterior border | 2 |
| Wings entirely hyaline | 4 |
| 2. Eyes with short, scanty hairs. Legs, black. Large species with very long depressed yellow hairs on the dorsum of the thorax | <i>ocinis</i> Hardy |
| Eyes, bare. Legs, mainly yellow. Small species with short inconspicuous yellow hairs on the dorsum of the thorax | 3 |
| 3. Apical segment of antennae about as long as the four segments preceding it | <i>silvicola</i> Hardy |
| Apical segment of antennae about as long as the two segments preceding it | <i>imperfecta</i> Hardy |
| 4. Scutellar spines entirely metallic green | <i>costata</i> White |
| Scutellar spines with at least the apical half yellow | 5 |
| 5. First antennal segment fully twice the length of the second | <i>nigricornis</i> Enderlein |
| First antennal segment only one and a half times the length of the second | 6 |
| 6. Palpi and antennae yellow; the latter may be stained with black | <i>incisuralis</i> Macquart |
| Palpi and antennae black; at most the latter is stained with yellow | <i>brevihirta</i> n. sp. |

Actina brevihirta n. sp.

Male.—The eyes have scanty short pubescence and are well separated. The frons is bluish black with a silver-white tomentose spot just above each antenna; these spots may become confluent. The white also covers the whole face. The antennae are normal with the first segment twice the length of the second (the proportion is limited to this sex). The proboscis is yellow and the palpi and antennae are black; the latter may be stained with brown.

The thorax dorsally, is almost entirely bright metallic green, with rather long yellow pubescence; the six scutellar spines are yellow, and the humeral and postalar callus, though dark, may be

lacking the metallic colour. The pleura is metallic, but much darker and with long, white hairs. The blue-black abdomen has both black and white hairs on it. The coxae, most of all the femora, the posterior tibiae, and all the tarsi except the posterior metatarsus are black, elsewhere yellow. The wings are hyaline. The male terminalia seem to differ distinctly from those of *A. incisuralis*, but they have not been studied in detail.

Female.—The hairs of the eye are not readily detected in this sex as they are very scattered. The eyes are much wider apart than those on *A. incisuralis*, but the antennal proportions are about the same. The pleura are of the same colour as the dorsal area of the thorax, and the abdomen has a light dorsal area covering at least three of the abdominal segments, while the ventral area is largely or entirely yellow-brown. The legs are entirely yellow except the tarsi which are more or less stained with black, and the apex of the posterior tibiae and tarsi may be more or less black. In other characters it agrees with the male.

Length.—5.6 mm.

Hab.—Queensland: Brisbane, 17 males, 4 females, May, 1932, all these were taken in the University grounds. Also 1 male, August, 1924, 1 male, October, 1925. Mt. Glorious, 2 males, 1 female, April, 1930.

New South Wales: Sydney, 1 male, April, 1928.

This species frequents grass and low vegetation, whereas other species known to me are associated with trees. The males were seen to dance in the air, and the females were sought for and found by sweeping low vegetation nearby.

Note.—Some remark is called for, in regard to the interpretation of the colour of the palpi. On the present species it is entirely black, and must not be confused with the case commonly met with in which the apex only is black. Enderlein gives the character of black for the Tasmanian *nigricornis*, the description of which reads very much like the present one. As far as I know, it is only the apical segment of the palpi that is black on *A. nigricornis*, as I do not know of this colour being otherwise represented on Tasmanian specimens; Enderlein described the female only. Another point of importance is present in the antennae. This is the first species described from the mainland on which the first segment is twice the length of the second. This character was hitherto limited to the Tasmanian specimens, but it is now found (on one sex only) on a Queensland species.

SUBFAMILY CLITELLARINAE.

Genus *Ophiodesma* White.

Ophiodesma White, Proc. Lin. Soc. N.S. Wales, xli., 1916, 88; Hardy, Proc. Roy. Soc. Tasmania, 1920, 49.

Diapontiomysia Kertész, Ann. Mus. Nat. Hung., xx., 1923, 116.

The above genera are based upon the southern species, the only one hitherto recognised, so there can be no doubt concerning the

synonymy. The northern species has been known to me for some years but I have failed to discover its breeding ground. *O. flavipalpis* is to be met with along the outskirts of rather boggy land at Blackheath, New South Wales, and is scarce. Specimens from Victoria seem to have been taken on land that is perpetually damp.

Key to species of *Ophiodesma*.

Frons of female with the central area corrugated, and a knob issuing from the median sulcus	<i>flavipalpis</i> Macq.
Frons of female with the central area smooth, and there is no interruption of the median line	<i>innodus</i> n. sp.

Ophiodesma flavipalpis Macquart.

Odontomyia flavipalpis Macquart, Dip. Exot. suppl. 4, 1849, 49.

Ophiodesma flavipalpis White, Proc. Lin. Soc. N.S. Wales, xli., 1916, 89.—Hardy, Proc. Roy. Soc. Tasmania, 1920, 50.

Diapontomyia rufispina Kertész, Ann. Nat., Hungary, xx., 1923, 118.

Both Macquart and Kertész described this species from the male, which they associated with the Stratiomyiinae. White established the female and removed the genus to this position, nevertheless the appearance of the form is strikingly like that of *Odontomyia*.

Description.—On the female, the frons is over a quarter the width of the head (eye-frons-eye measurements are 15-11-15), and much of it is covered with a short pubescence; a fairly large area is bare, showing corrugations, the ridges of which descend each side of a knob that protrudes through the median sulcus; there are four of these ridges, and outside these the frons is densely punctured, each puncture bearing a hair. The sulcus through which the knob protrudes, extends down from the ocellar tubercle ending at a transverse suture where the corrugations and the punctures also cease. The scutellum is semicircular, the spines being placed at each third of its apical border. The colour of the eyes, when alive, was not noted.

Hab.—New South Wales. The species is well represented in various collections, and the one from which the above description is taken is from Sydney, March, 1918. There is a male before me from the same locality, dated November, 1919. Sydney is the type locality given by Kertész.

Ophiodesma innoda n. sp.

This species was originally confused with *O. flavipalpis*, from which it differs by having the frons distinctively different on the female.

Female.—The frons is under one quarter the width of the head (15-9-15) with a low bare flat carina on which the median line is distinguishable; the protruding knob and the corrugations are missing. On each side of the carina the frons is densely punctured except for an interruption midway between the ocellar tubercle and the base of the antennae, where it is shining like the carina; both the carina

and the punctures stop at a transverse suture just above the antennae. The scutellum is less widely semicircular in comparison with that of the typical form, and the spines are much closer together, so that the distance between them is noticeably shorter than that from the spines to the thorax along the margin of the scutellum.

The species is like the typical one in many other respects, but besides differing in the above characters, the hairs of the thorax tend to form stripes, a character to be noted in both sexes, whilst the margin behind the eyes, seen from the lateral aspect, is not quite as broad, being reduced in conformity with the smaller head. When alive the eyes were green, with a spot above and below, purple in colour, and edged with red. Between these spots were five similarly coloured bars, two touching the posterior border of the eye, and two the anterior border.

Male.—This is very similar to the male of *O. flavipennis*, but there is a tendency for the scutellar spines to be closer together, but not to any very marked degree.

Hab.—Queensland; Brisbane, one female (holotype), March, 1924, and one male (allotype), November, 1929.

Tribe Antissini.

Members of this tribe are to be distinguished by the presence of a short bristle-like spine at the apex of the intermediate tibiae. There are two genera placed here, both unknown to White, and I have been unable to trace them. *Antissa* was based on a Western Australian species by Walker, and it might be the same as *Antissella* White, whilst *Anacanthella* Macquart, from South Australia, might be *Lecomymia* White.

Genus *Lecomymia* White.

This genus is readily distinguished by the very broad abdomen, being about as broad as long. Of the typical form, *L. quinquecella* Macquart, only the male is known, so a key to the species cannot yet be given.

Lecomymia cyanea White.

White described the female only, from the Hawkesbury River, New South Wales. It has since been found in Queensland, where it occurs on tree-trunks, and is difficult to catch.

Male.—Eyes separated, and with dense white pubescence (on *quinquecella* Macquart, this pubescence is black). The frons is blue, the pubescence together with that at the summit, is black, except that some white hairs occur at about half its length, and again just above the antennae, and thence the white hairs occur down much of the face. The beard is white, and behind the head the hairs are black and white. The black palpi have mainly black hairs, but some white ones are to be detected. The thorax is very dark, practically black, but with violet reflections, and much of the pubescence on it is white, and forms a distinct pattern. The scutellum lies at an angle

of about 30 degrees to a line drawn from the neck to the base of the scutellum ; it is fringed with long white hairs, and elsewhere on it, the pubescence is black. The abdomen is blue with violet reflections, the pubescence is mainly dark, but white hairs form two or four pairs of diagonally placed lateral bars. The coxae, femora and tibiae are mainly black, with much shorter white hairs ; the knees and tarsi are white. On the wings a band is more or less clearly defined, reaching right across from the costa, and is invariably indicated just behind the radio-median crossvein, even when the remainder is completely obsolete.

Hab.—Queensland ; Brisbane, September to November, 1923 and 1925. The allotype male and five paratype males are in my collection. Other paratypes are in various collections.

Lecomymia notha n. sp.

Male.—The eyes are densely pubescent, with long black hairs, and they are approximated from the ocellar tubercle to near the insertions of the antennae. The very small frons so formed, is metallic but very dark, and the same colour extends on to the face which widens out, being much wider than that of the species referred to above. The pubescence of the face and frons is mainly white, elsewhere on the head it is black. The antennae are brown, the segments 4 to 10 being shorter than normal, and some of these segments are difficult to detect ; all the segments together are shorter than the head. The black palpi have black hairs. The thorax is vivid blue, as are the scutellum and abdomen ; it has violet reflections and is covered with long black hairs which extend on to the scutellum. The scutellum has four pairs of short spines, all the same size, and there is a subapical depression bordering it for the entire length of its outer margin ; the last character is not to be detected on the other species. The uniformly distributed black and white pubescence of the vivid blue abdomen, is short and does not form a pattern. The legs are entirely black and the wings hyaline.

Female.—This differs from the male by having the eyes widely separated, the frons being metallic blue, but becoming black just above the antennae ; the black extends down the face and the area so covered bears white hairs. White hairs are traceable in the beard, on the palpi and down the centre of the frons. The palpi are black with a brown tip. The pubescence of the thorax is very short, and hairs reflect white when seen at an angle. The pubescence of the scutellum and abdomen is similar.

Hab.—Queensland ; Ormiston, near Cleveland, August, 1924. Three males and two females were found resting on twigs in a patch of bush beside the railway station. Brisbane, August, 1929, two males from twigs at Mt. Gravatt close to the township.

Genus *Antissella* White.

There is little to distinguish this genus from *Lecomymia*, but the spines are reduced to mere knobs along the border of the scutellum, and the abdomen is more or less longer than broad, also the general

appearance is quite different. One species described from Tasmania, *A. parvidentata* Macquart, has also been taken in New South Wales, Barrington Top (G. Goldfinch, December, 1921), and another species from Brisbane, described below, has the thorax covered with bright yellow depressed hairs.

Antissella angustifrons n. sp.

Female.—The frons is rather narrow, metallic, and with a carina strongly indicated; white hairs occur at about the central third of the frons on each side of the carina, and again just above the antennae, from where they continue on the face. Behind the head the hair is also white. The eyes are minutely hairy and appear to be bare and the antennae are black. The dorsal surface of the thorax and scutellum is metallic green and densely covered with bright yellow depressed hairs that give the appearance of being golden. The metallic colour of the blue-black abdomen is scarcely discernible. The legs are yellow. Length: 5 mm.

Hab.—Queensland, Sunnybank, near Brisbane, October, 1927, one female taken on a window. Other specimens are in various collections but only this one is before me. The species appears to be distributed widely, and perhaps is more frequently to be found inland.

SUBFAMILY SARGINAE.

White recognised two genera in this subfamily, one of which he attributed to *Sargus*. Later Hill added another species that evidently comes into this subfamily but he apparently knew neither of White's generic conceptions, and the species he allied with *Sargus* is not congeneric with that of White, if his description is correct. Reference must also be made here to *Geranopus* White, which would seem to be anomalously placed by White in Clitelarinae, on wing venation, but shows affinities with this subfamily. I have seen White's type but was unable to place it satisfactorily. The two genera may be distinguished by *Sargus* being metallic blue without scutellar spines, and *Acanthasargus* being otherwise coloured and with scutellar spines; in both, the arista is placed dorsally on the terminal segment which is either the sixth or perhaps the seventh segment. This character will distinguish the two genera from *Geranopus*, and from the species placed by Hill under *Sargus*. I do not know if the generic conception thus limited, is strictly applicable to *Sargus*, but it agrees fairly well with that genus as generally understood. White's species differs from the one here described by colouration, the abdomen being metallic brown with a golden tinge.

Sargus darius n. sp.

Female.—Metallic blue with violet reflections. Frons is narrow and a third of its length, just above the antennae, is white. The anterior ocellus is three times further away from the posterior ones, than the posterior ones are from each other. The face is brown, and the proboscis white. The head is deeply excavated behind the eyes and black, the neck is long and dirty yellow brown. The yellow brown antennae have seven segments discernible, the arista being placed

dorsally on the apical one. A few hairs are readily seen under the binocular on the arista. The antennae are inserted at about three-quarters the depth of the head and, seen in profile, the frons protrudes beyond the eye margin.

The thorax has a white humeral callus, and a white line running from it to the insertions of the wings. Below this line, a large brown triangular area occurs. There is also a large brown area covering the postalar callus and metapleura, and it extends in a line round the scutellum. The anterior and postalar coxae are more or less tinged black in parts, the posterior pair being mostly shining black, and the femora have a dark subapical patch. The tibiae are basally black, and the intermediate and posterior tarsi are mostly dark on the type, but this colour varies. In other respects the legs are yellow. Five abdominal segments are normal, the sixth and onwards form the tubular ovipositor, the apex of which is yellow, with metallic blue two-segmented lamellae.

Length.—9 to 7 mm.

Hab.—Queensland: holotype from Gt. Palm Island, May, 1925. There are four paratypes, Brisbane Botanical Gardens, March, 1926 (from a window, H. Tryon), Dunk Island, May, 1927 (A. J. Turner), and May, 1914 (R. Hamlyn Harris), Tamborine Mt. (W. Davidson). The three last are in the Queensland Museum. In the Deutsches Entomologisches Institut Berlin, there is another paratype from Kuranda, February, 1910.

Genus *Acanthasargus* White.

This genus differs from *Sargus* by having spines at the apex of the scutellum, and, in addition, the appearance is quite distinct.

Key to species of genus *Acanthasargus*.

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| 1. Thorax and abdomen entirely black | | 2 |
| Thorax and abdomen yellow in part | | 3 |
| 2. Scutellum and scutellar spines black | | <i>pallustris</i> White |
| Scutellum with a yellow bar between yellow scutellar spines | | <i>gracilis</i> White |
| 3. Scutellum and spines entirely yellow; legs almost entirely yellow | | <i>flavipes</i> n. sp. |
| Scutellum black, scutellar spines yellow; legs yellow, with sections of the femora and tibiae black | | <i>varipes</i> n. sp. |

Acanthasargus flavipes n. sp.

Female.—The frons, antennae, face and the whole of the post-ocular region are black, except for two yellow spots on the frons, situated one above each antenna and another pair of yellow spots occur on the flange, one behind the upper corner of each eye. The proboscis is yellow. The thorax is black, except that the humeral callus and the postalar callus are yellow; the same colour also extends

along a strip of the pleura between the humeral callus and the wing insertions. The scutellum is yellow. The black abdomen has the dorsal surface laterally margined with yellow, the colour extends slightly so as to form lateral confluent spots on each segment. The coxae and the two apical segments of the tarsi are black, otherwise the legs are entirely yellow.

The male is similar except that the eyes are contiguous for most of their length, and the spots above the antennae are confluent whilst the flange behind the eyes is almost eliminated, and the yellow occurs there as a line.

Length.—5 mm.

Hab.—Queensland : Brisbane, May and September to November 1929 and 1930, two males and four females, all taken on windows in the University.

Acanthasargus varipes n. sp.

Female.—Head black, but with two large confluent yellow spots above the antennae, these forming a broad bar that reaches from eye to eye and are hardly divided in the centre ; in addition, the flange behind the eyes is yellow on the upper two thirds. The thorax has the humeral callus and the postalar callus yellow, the same colour extends along a strip of the pleura, from the humeral callus to the wing insertions. The scutellum is black, with the spines yellow or testaceous. The black abdomen has a pair of yellow lateral spots on three segments. The coxae are stained black, but the yellow is discernible in places. The femora and tibiae have a black ring, broad on the former, situated at about half their length, otherwise these and the first two segments of the tarsi are yellow, and the other segments of the tarsi are stained black.

The male is similar, but the frons is very narrow, almost linear, but widens above the antennae to a triangular area which is yellow. The flange behind the eyes is broad, and like that of the female.

Length.—5 mm.

Hab.—Queensland : Brisbane, January, February, April, and from September to December, 1927 to 1930, two males and nine females. Some of these were taken on windows in the University, but others were gathered, either on vegetation on a piece of waste ground, or resting on leaves, in the University grounds and in the Botanical Gardens.

REFERENCES.

Full references, not given above for genera and species, will be found in my catalogue in the *Proceedings of the Royal Society of Tasmania*, for the year 1920, pp. 33-64 ; and for the purposes of this paper add :—

KERTESZ.—Ann. Mus. Nat. Hungarici, xviii., 1921, 171 (*Syndipnomyia*) ; and xx., 1923, 124 (*Pycnothorax*).

HARDY.—Proc. Roy. Soc. Queensland, xliii., 1932, 51. (*Actina*).